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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/675,572	09/30/2003	Gerald W. Gibson JR.	Gibson 12/075903-208	9966

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EXAMINER

TOLEDO, FERNANDO L

ART UNIT PAPER NUMBER

2823

DATE MAILED: 12/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/675,572

Applicant(s)

GIBSON, GERALD W.

Examiner

Fernando L. Toledo

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 October 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) 1-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 21-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of claims 21 – 30 in the reply filed on 18 April 2005 is acknowledged. The traversal is on the ground(s) that a different process does not require a different apparatus and that different classification does not require a different search. This is not found persuasive because the process can be done with a different apparatus and hence it will require different parameters for searching. A different search will require a whole new set of parameters that would hence be a serious burden on the Examiner. Therefore, a different classification (with different parameters for searching) would facilitate the search of the prior art.

The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 21 and 23 – 30 are rejected under 35 U.S.C. 102(b) as being anticipated by Jerbic (U. S. Patent 5,500,076 A).

4. In re claim 21, Jerbic, in the U. S. Patent 5,500,076 A; figures 1 and 2 and related text discloses a first optical device for producing a first signal representative of an actual etchant gas concentration, wherein the first signal is based on an emissive spectral line for the etchant gas

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(Column 3, Lines 26 – 45); a second optical device for producing a second signal of an inert gas concentration, wherein the second signal is based in an emissive spectral line for the inert gas, wherein the emissive spectral line for the etchant gas and the emissive spectral line of the inert gas exhibit similar cross-section for excitation (Columns 3 and 4, Lines 39 – 41 and 50 – 65; respectively); an element for relating the first and the second signals to produce a normalized etchant gas concentration signal (Column 4, Lines 10 – 19); a comparing element for comparing the normalized etchant gas concentration signal with a signal representing a desired etchant gas concentration and for producing an error signal in response thereto (Column 3, Lines 10 – 15); an integrating element for producing an integrated error signal responsive to the error signal (Column 4, Lines 5 – 10); an adding element responsive to the integrated error signal and to a signal representative of the desired etchant gas concentration for producing a control signal provided to the first mass flow controller for controlling the etchant gas concentration (Column 4, Lines 10 – 19).

5. In re claim 23, Jerbic discloses wherein the inert gas includes argon (Column 3, Line 58).
6. In re claim 24, Jerbic discloses further including an energy source for forming a plasma in the etch chamber (Column 4, Lines 25 – 27).
7. In re claim 25, Jerbic discloses wherein the first signal includes a first signal representative of a spectral emission line formed by the etchant gas interacting with the plasma (Column 3, Lines 26 – 33).
8. In re claim 26, Jerbic discloses wherein the second signal includes a second signal representative of a spectral emission line formed by the inert gas interacting with the plasma (Column 3, Lines 50 – 57).

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9. In re claim 27, Jerbic discloses wherein the element for relating the first and second signals includes a divider (Figure 2).

10. In re claim 28, Jerbic discloses wherein the first optical device comprises in serial relation, and optical fiber disposed to receive light energy from within the etch chamber, an optical filter and a light detector for producing the first signal (Column 3, Lines 26 – 33).

11. In re claim 29, Jerbic discloses wherein the second optical device includes in serial relation, an optical fiber disposed to receive light energy from within the etch chamber, an optical filter and a light detector for producing the second signal (Column 3, Lines 51 – 57).

12. In re claim 30, Jerbic discloses wherein the first and second optical devices are responsive to a bifurcated optical fiber disposed within an opening in the etch chamber and responsive to spectral emissions in the etch chamber, wherein the optical fiber carries an optical representative of the actual etchant gas concentration and the inert gas concentration (Column 4, Lines 10 – 19).

Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jerbic in view of Applicant's Admitted Prior Art (AAPA).

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15. Jerbic does not disclose that the etchant gas includes an oxygen radical. However, Jerbic discloses that the disclosed device can be used in any plasma-enhanced process, including plasma etch (Column 4, Lines 25 – 27).

AAPA discloses a conventional plasma etching process wherein the etchant gas includes oxygen radicals (page 3, paragraph 0007).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the device of Jerbic with the process of AAPA, since the device of Jerbic obtains a ratio of reactant gas and inert gas that indicates the concentration of consumable reactant in the chamber which would be relatively free of noise (Column 3, Lines 26 – 33).

Response to Arguments

16. Applicant's arguments filed 3 October 2005 have been fully considered but they are not persuasive for the following reasons.

17. Applicant contests that Jerbic does not show the gas exhibiting similar cross-section of excitation. Examiner respectfully submits that Jerbic discloses such limitation in the example given at the end of column 4, starting in line 37.

18. Applicant also contests that Jerbic does not disclose an integrating element and an adding element. Examiner respectfully submits that both are disclosed by Jerbic in column 3, lines 12 – 25, 40 – 45 and column 4, lines 4 – 10.

Conclusion

19. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fernando L. Toledo whose telephone number is 571-272-1867. The examiner can normally be reached on Mon-Thu 7am to 5:30pm.

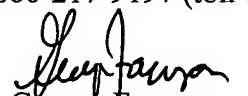
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Smith can be reached on 571-272-1907. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



FToledo
15 December 2005



George Fourson
Primary Examiner
Art Unit 2823